

In the Claims:

1 (withdrawn). An apparatus for providing carbon dioxide to a plant, comprising:

(a) a chamber adapted to enclose at least a portion of said plant;

(b) a gas source capable of providing gas substantially free of carbon dioxide; and a carbon dioxide generator in fluid communication with said chamber and said gas source, said generator comprising a vessel containing an aqueous solution of at least one of hydrogen carbonate ions and carbonate ions.

2 (withdrawn). The apparatus of claim 1 wherein said generator further comprises an agitator capable of agitating said solution.

3 (withdrawn). The apparatus of claim 2 wherein said agitator is an inlet to said vessel in fluid communication with said gas source.

4 (withdrawn). The apparatus of claim 1 wherein generator further comprises a fan.

5 (withdrawn). The apparatus of claim 1 wherein said generator has a loading section for addition of a solid source of at least one of hydrogen carbonate ions and carbonate ions.

6 (withdrawn). The apparatus of claim 1 wherein said chamber has a carbon dioxide content of from 0 to 4000 ppm.

7 (withdrawn). The apparatus of claim 1 wherein said generator further comprises a source of acid.

8 (currently amended). A method for providing carbon dioxide to a plant, comprising the steps of:

(a) providing a chamber and enclosing at least a portion of said plant within said chamber;

(b) providing a gas source capable of providing a first gas substantially free of carbon dioxide;

(c) providing a carbon dioxide generator in fluid communication with said chamber and said gas source, said generator comprising a vessel containing an aqueous solution of at least one of hydrogen carbonate ions and carbonate ions;

(d) producing carbon dioxide from said aqueous carbonate solution by processing said solution in a way that causes carbon dioxide in said solution to off-gas, diffuse from said solution; and

(e) mixing said carbon dioxide off-gassed from said solution with said first gas to produce a gas mixture having a predictable determinable level of carbon dioxide and flowing said gas mixture into said chamber; and

(f) adding a solid source of at least one of hydrogen carbonate ions and carbonate ions to said generator;

wherein the step of producing carbon dioxide from said aqueous carbonate solution includes producing said carbon dioxide substantially without the addition of acid.

9 (previously presented). The method of claim 8, wherein said carbon dioxide producing step comprises the step of agitating said solution to cause carbon dioxide to be emitted from said solution.

10 (previously presented). The method of claim 9, wherein said step of agitating said solution comprises flowing said first gas through said aqueous carbonate solution.

Cancel claim 11.

12 (previously presented). The method of claim 8, wherein the step of producing carbon dioxide from said aqueous carbonate solution includes one or more of the following steps:

stirring said aqueous carbonate solution while moving a gaseous phase material across the top surface of said aqueous carbonate solution; and

flowing a gaseous phase material through said aqueous carbonate solution.

Cancel claim 13.

14 (previously presented). The method of claim 8, wherein said step of producing carbon dioxide from said aqueous carbonate solution includes evacuating a gaseous phase substance above a top surface of said solution so as to facilitate diffusion of carbon dioxide from said solution into the evacuated space.

15 (currently amended). A method for providing an elevated level of carbon dioxide to a plant culturing environment, comprising the steps of:

- (a) forming an enclosure to surround a plant;
- (b) providing a carbon dioxide generator in fluid communication with said enclosure, said generator comprising a vessel containing an aqueous solution of at least one of hydrogen carbonate ions and carbonate ions, said at least one of hydrogen carbonate ions and carbonate ions being added at least in part to said generator as a solid; and
- (c) producing carbon dioxide from said aqueous carbonate solution by causing carbon dioxide in said solution to eff-gas-diffuse from said solution in a sufficient quantity so as to elevate the level of carbon dioxide in said enclosure above ambient level;

wherein the step of producing carbon dioxide from said aqueous carbonate solution includes one or more of the steps of:

stirring said aqueous carbonate solution while evacuating a gaseous phase substance above a top surface of said solution so as to facilitate diffusion of carbon dioxide from said solution into the evacuated space; and

flowing a gaseous phase substance through said aqueous carbonate solution; and

wherein the step of producing carbon dioxide from said aqueous carbonate solution includes producing said carbon dioxide substantially without the addition of acid.

16 (currently amended). The method of claim 15, wherein the step of producing carbon dioxide from said aqueous carbonate solution includes the step of stirring said solution to emit said carbon dioxide both said stirring step and said flowing step.

Cancel claims 17-18.

19 (previously presented). The method of claim 15, further comprising the step of channeling a gaseous substance containing carbon dioxide from said aqueous carbonate solution to a defined output.

Cancel claim 20.

21 (previously presented). The method of claim 15, further comprising the step of flowing said aqueous carbonate solution through said vessel.

22 (original). The method of claim 15 wherein said enclosure is a greenhouse.

23 (currently amended). A method for providing carbon dioxide to an environment, comprising:

(a) placing a carbon dioxide generator in an environment, said generator comprising a vessel containing an aqueous solution of at least one of hydrogen carbonate ions and carbonate ions;

(b) processing said aqueous carbonate solution to produce carbon dioxide by causing carbon dioxide in said solution to eff-gas-diffuse from said solution, wherein said carbon dioxide is produced substantially without addition of acid to said aqueous carbonate solution; and

(c) producing carbon dioxide from said aqueous solution in a sufficient quantity so as to elevate the level of carbon dioxide in said environment; and

adding a solid source of at least one of hydrogen carbonate ions and carbonate ions to said generator.

24 (previously presented). The method of claim 23, wherein said step of processing said solution comprises flowing a gas through said aqueous solution.

25 (previously presented). The method of claim 23, wherein said step of processing said solution includes one or more of the steps of stirring said aqueous carbonate solution; flowing a gaseous phase substance through said aqueous carbonate solution; and evacuating the gaseous phase substance above a top surface of said solution so as to facilitate diffusion of carbon dioxide from said solution into the evacuated space.

Cancel claim 26.

27 (original). The method of claim 23, further comprising the step of flowing said aqueous solution through said vessel.

28 (original). The method of claim 23 wherein said environment is a plant culturing environment.

29 (withdrawn): An apparatus for providing carbon dioxide, comprising:

- (a) a vessel containing an aqueous solution of at least one of hydrogen carbonate ions and carbonate ions, said vessel comprising an agitation section;
- (b) an agitator adapted to agitate said solution;
- (c) a water source in fluid communication with said vessel for supplying water to said vessel; and
- (d) said vessel having a drain to allow said aqueous solution to flow out of said vessel.

30 (withdrawn). The apparatus of claim 29, further comprising a loading section.

31 (withdrawn). An apparatus for generating carbon dioxide, comprising:

- (a) a chamber;
- (b) a carbon dioxide generator in fluid communication with said chamber, said generator comprising a first section containing an

aqueous solution of at least one of hydrogen carbonate ions and carbonate ions and a second section containing an acidic solution, and (c) a wick disposed between said first section and said second section:

32 (previously presented). The method of claim 8, further comprising the step of:

channeling a gaseous substance containing carbon dioxide from said aqueous carbonate solution to a defined output.

33 (previously presented). The method of claim 15, wherein said step of producing carbon dioxide from said aqueous carbonate solution includes the step of evacuating a gaseous phase substance above a top surface of said solution so as to facilitate diffusion of carbon dioxide from said solution into the evacuated space.

34 (previously presented). The method of claim 23, further comprising the step of:

channeling a gaseous substance containing carbon dioxide from said aqueous carbonate solution to a defined output.

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☒ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**